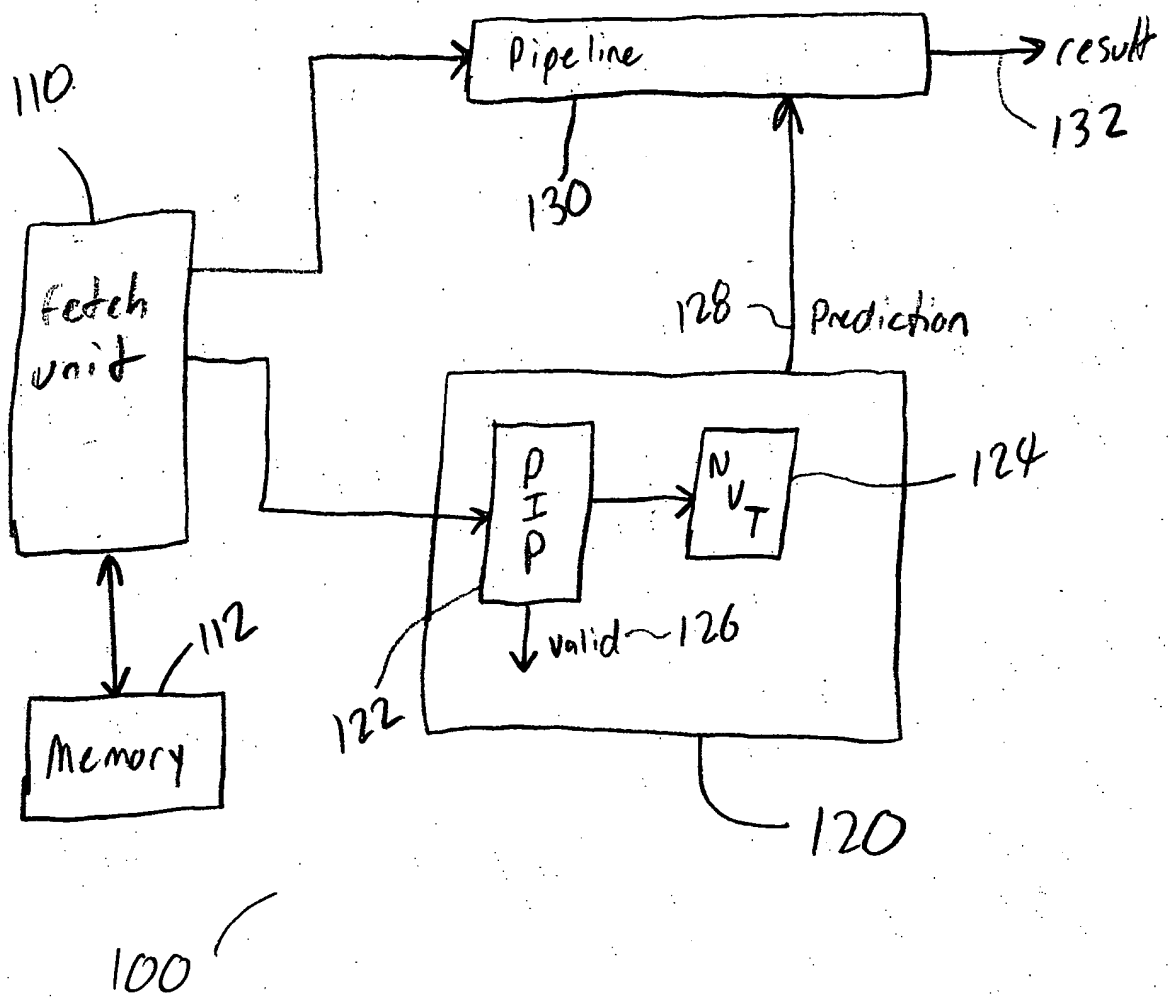
Pipeline
result
132
110
130
Fetch unit
128
Prediction
P I P
N V T
124
valid
126
112
122
Memory
120
100

Fig. 1

SCANNED, # 11

200

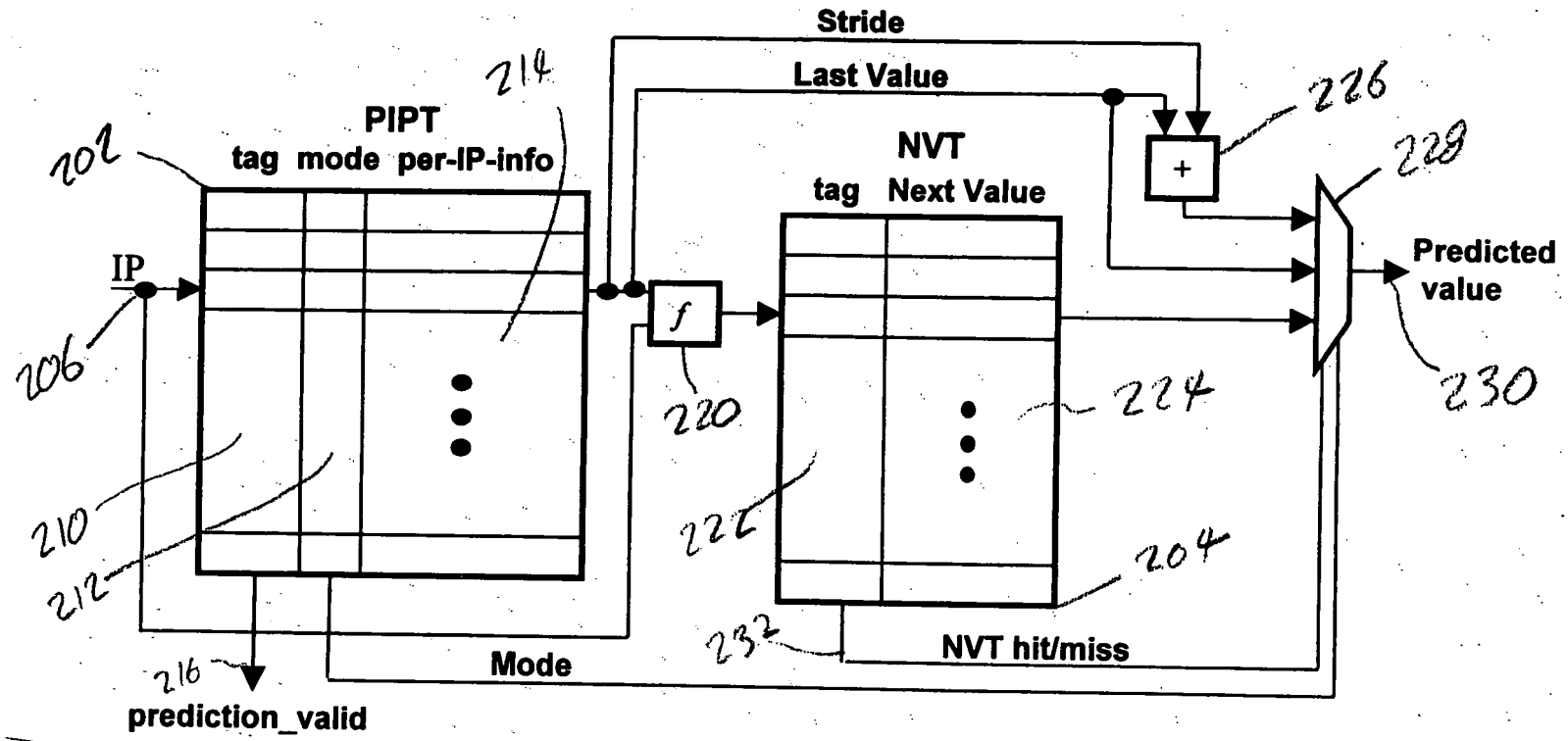

Fig. 2a

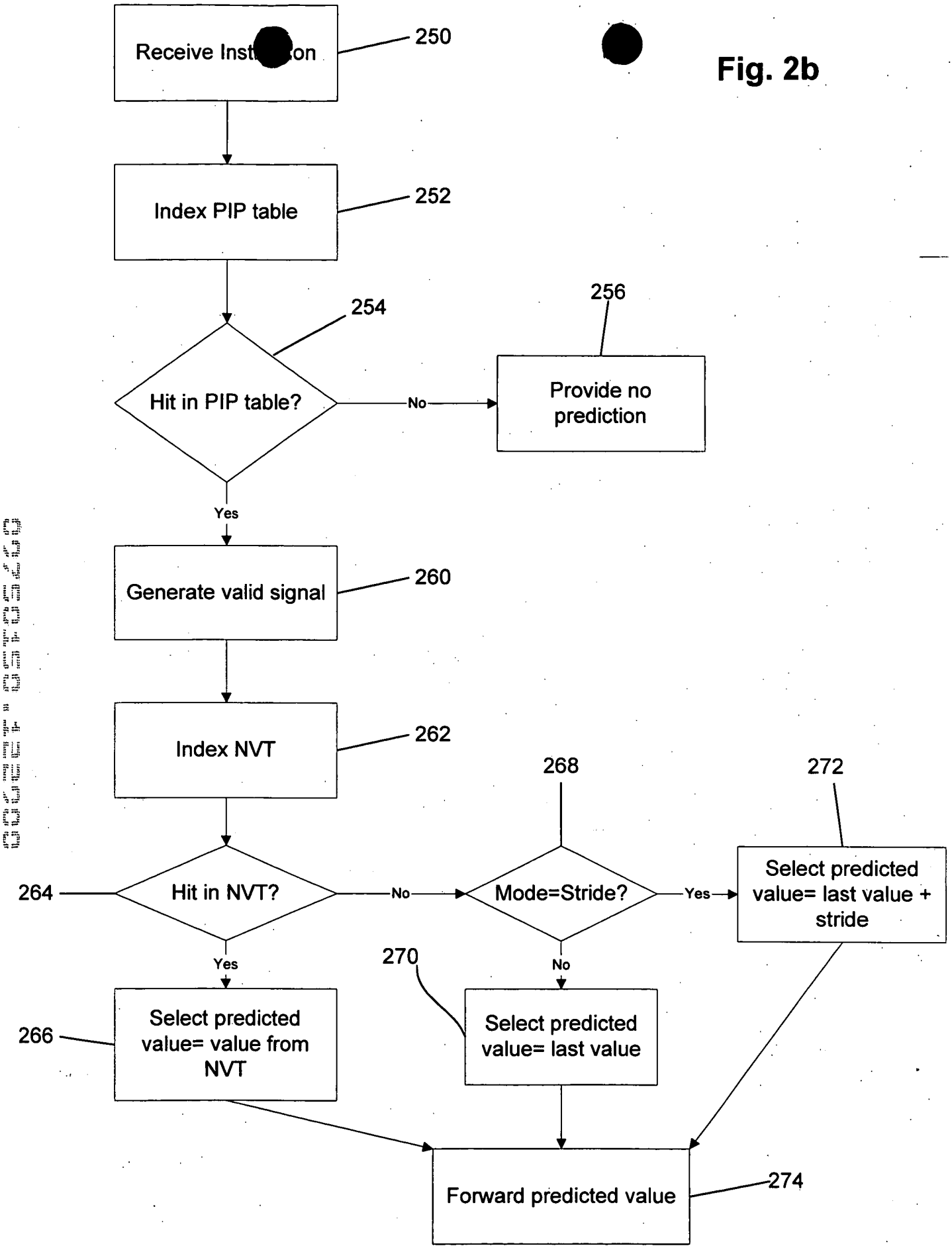
Receive Instruction
250
Index PIP table
252
254
Hit in PIP table?
No
256
Provide no prediction
Yes
Generate valid signal
260
Index NVT
262
264
Hit in NVT?
No
268
Mode=Stride?
Yes
272
Select predicted value= last value + stride
Yes
No
270
266
Select predicted value= value from NVT
Select predicted value= last value
Forward predicted value
274

Fig. 2b

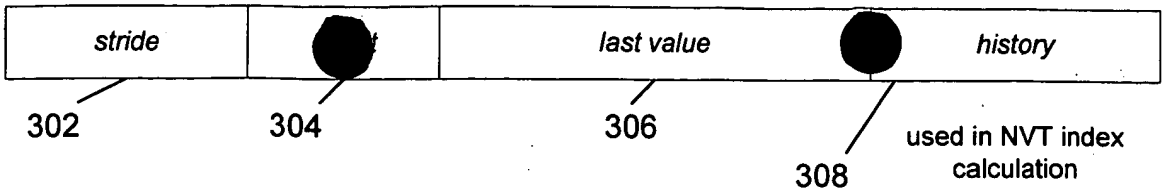

Fig. 3a

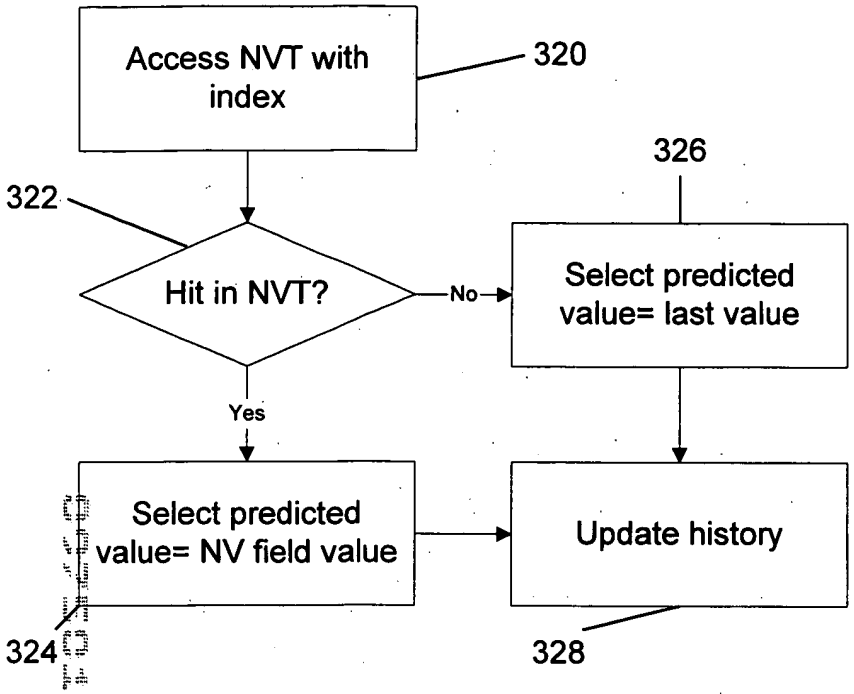

Fig. 3b

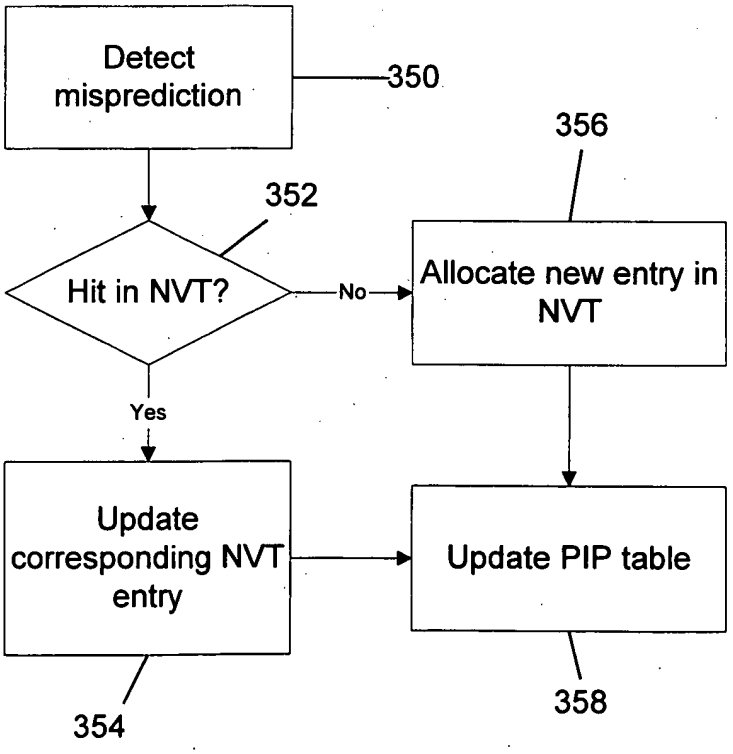

Fig. 3d

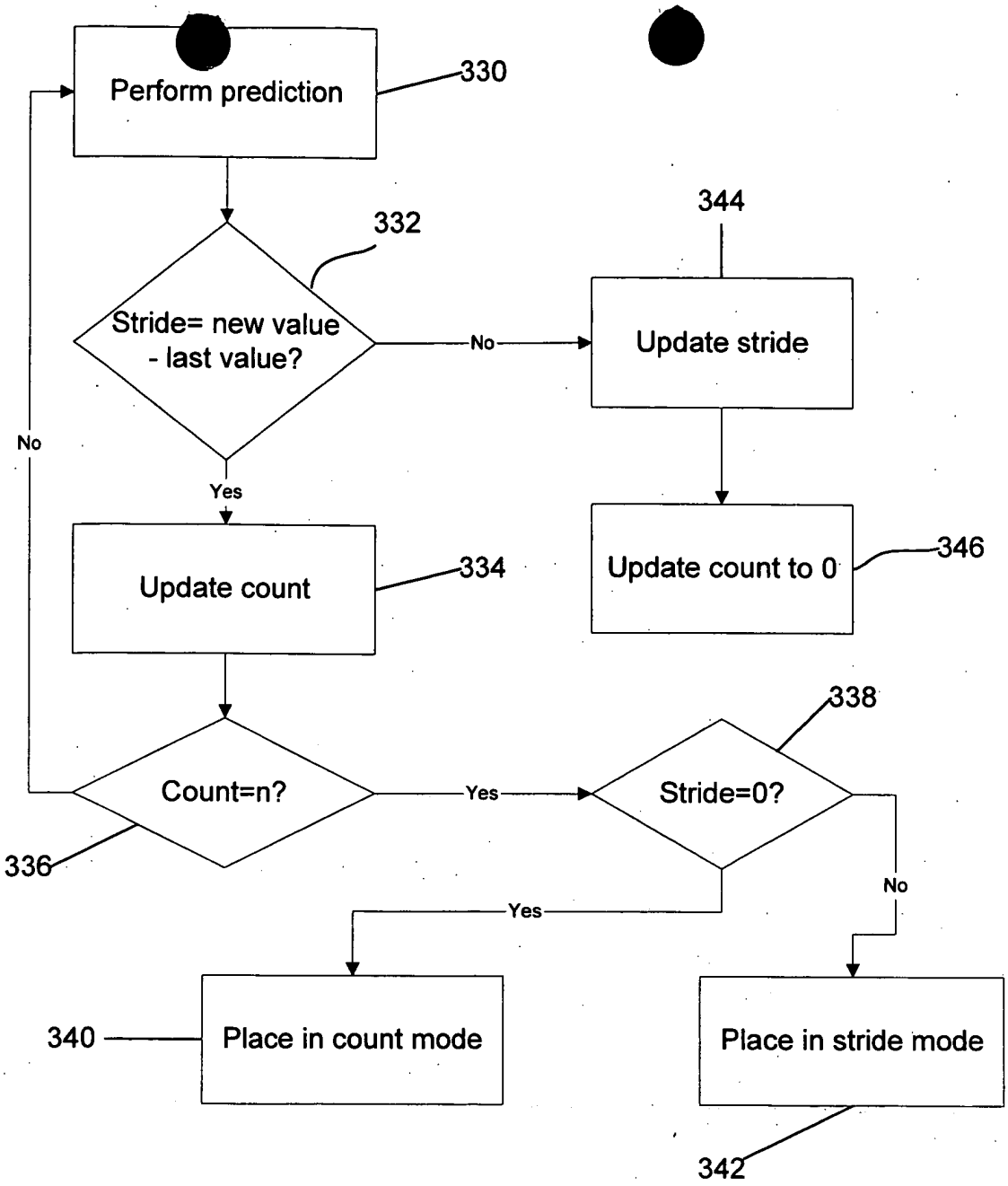
Perform prediction
330
332
Stride= new value - last value?
No
344
Update stride
No
Yes
Update count
334
Update count to 0
346
338
Count=n?
Yes
Stride=0?
336
No
Yes
340
Place in count mode
Place in stride mode
342

Fig. 3c

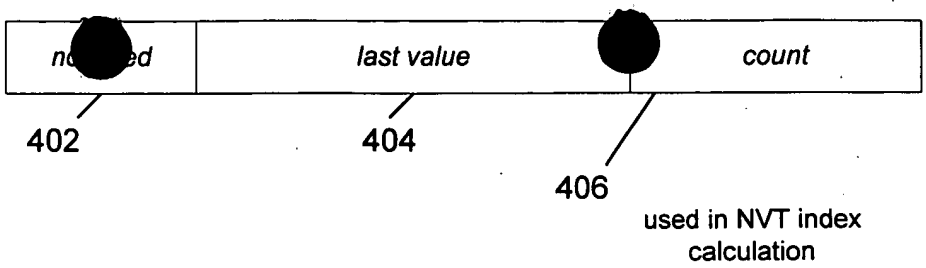

Fig. 4a

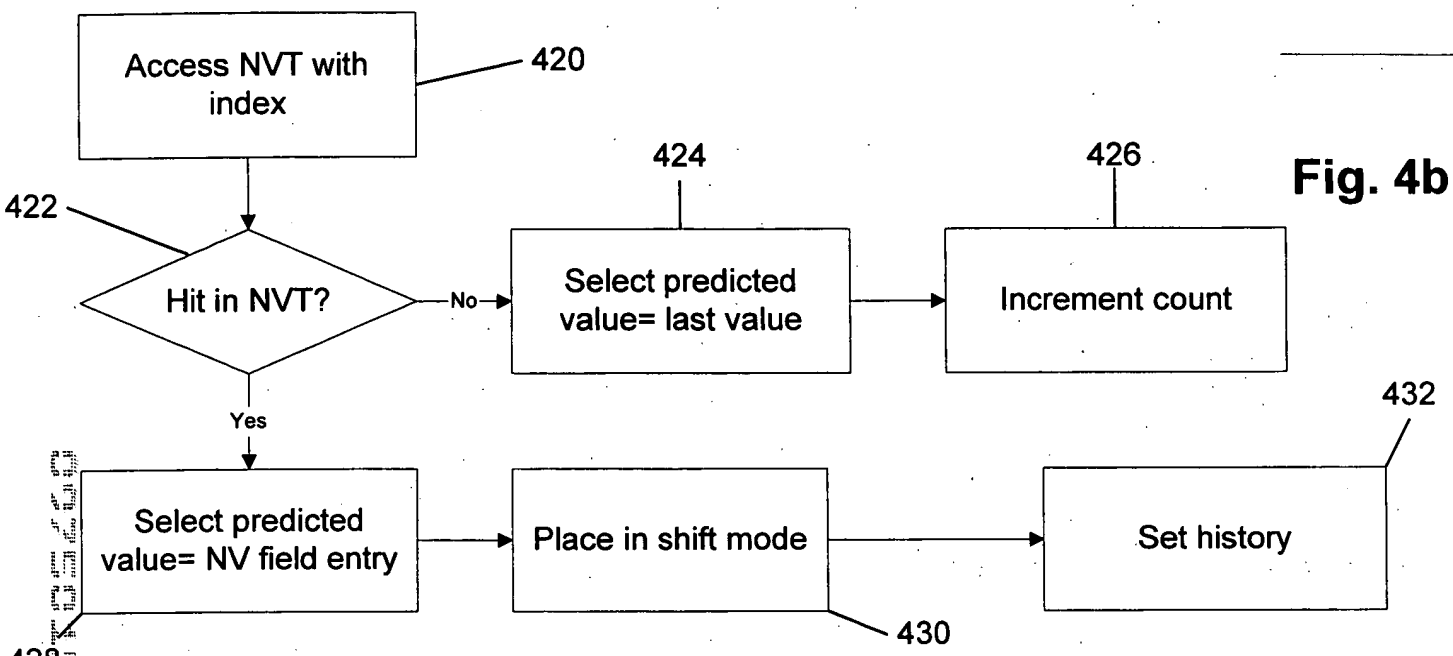

Fig. 4b

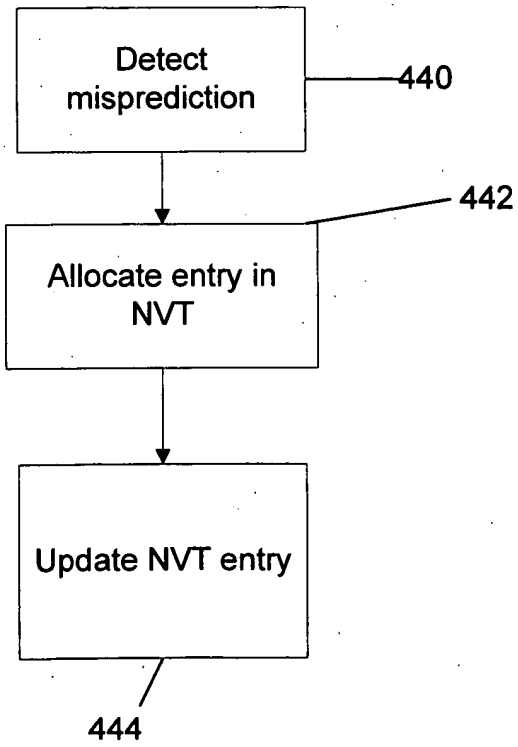

Fig. 4c

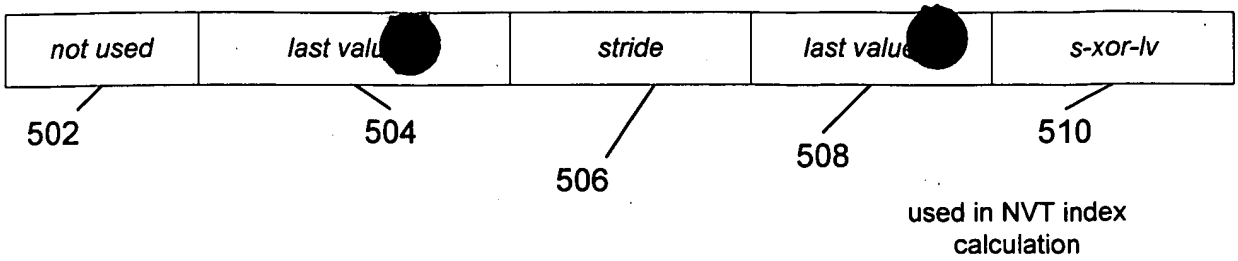

Fig. 5a

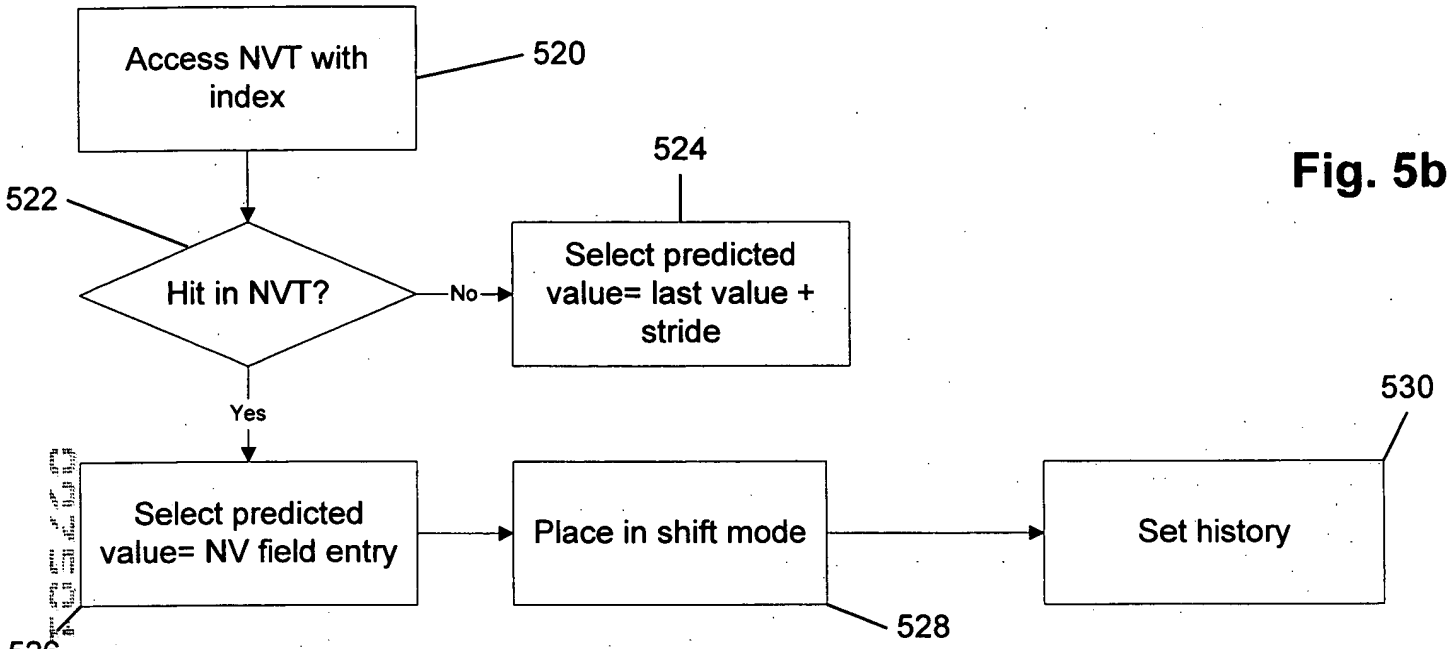

Fig. 5b

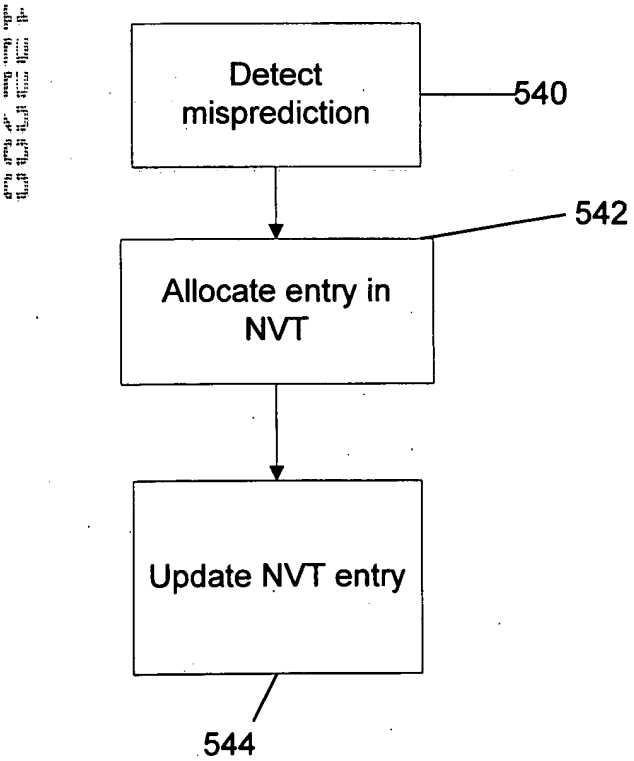

Fig. 5c

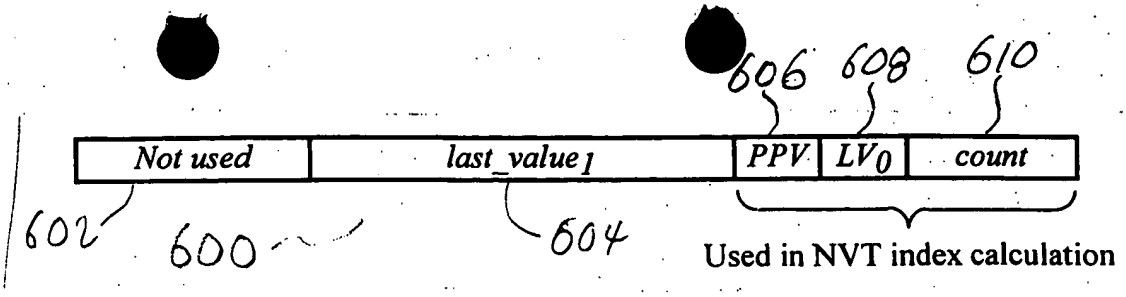
606
608
610
Not used
last_value1
PPV
LV0
count
602
600
604
Used in NVT index calculation

Fig. 6